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09/858,324	05/15/2001	Zahid Najam	10736/8	1475
757	7590	05/06/2004	EXAMINER	
BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60610			GOSSAGE, GLENN A	
			ART UNIT	PAPER NUMBER
			2187	6
DATE MAILED: 05/06/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/858,324	NAJAM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Glenn Gossage	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. It appears --USING A SHARED MEMORY TO STORE PACKET DATA-- or other similar language should be inserted after "NETWORK" so that the title is more clearly indicative of the subject matter to which the present invention is directed. The loss in brevity of title is more than offset by the gain in its informative value in indexing, classifying, searching, etc. See MPEP 606 and 606.01.

2. The abstract of the disclosure is objected to because it does not enable one to quickly determine from a cursory inspection the nature and gist of the technical disclosure as required by 37 CFR 1.72(b). It appears in line 1, "An inter-process intercommunications interface is disclosed. The interface permits" should be changed to --A method and apparatus for processing a bi-directional dataflow are disclosed which-- or other similar language for clarity and completeness (note claims 1, 10 and 19, line 1, e.g.).

Also, one or two sentences or phrases should be added describing additionally claimed and disclosed features. For example, in line 2, before "memory" insert --shared-- (see claim 1, line 6; claim 10, line 5; and claim 19, line 4, e.g.). Also, in line 8, after "device." insert sentences/phrases such as --so that substantially all of the bidirectional bandwidth is utilized for unidirectional data flow. The shared memory may comprise a plurality of banks of synchronous dynamic random access memory (SDRAM) devices, and may be used to store packet data in a network. --. Note claims 2, 6, 11 and 15, as well as Figure 3 and pages 1-3 and 19-24 of the specification, e.g.]

Appropriate correction is required. See MPEP § 608.01(b).

3. The drawings are objected to because in Figure 3, it appears the “box” for control logic 224 should be shown as a “dashed” box (similar to that enclosing SDRAM’s A to D, e.g.) to avoid confusion with the signal lines.

In Figure 5, the reference numerals 530, 532, 534 and 536 are confusing, as they appear to be pointing to the same element or “box.” In “boxes” 504 and 516, it appears --and State Machine-- should be inserted after “Registers” for clarity and consistency (see paragraph [0076], at line 1, and paragraph [0089], at lines 1-2, e.g. Note that the “boxes” may need to be enlarged slightly.

In Figure 7, the legend or writing at the bottom, right of the Figure has been cut off and is illegible.

Applicant is REQUIRED to submit a proposed drawing correction in response to this Office action. However, actual formal correction of the noted defect(s) (submission of corrected formal drawings, e.g.) can be deferred until the application is allowed by the examiner.

Also note MPEP 608.02(r) and (v).

4. The disclosure has not been checked by the Examiner to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the disclosure. The following objections are specifically noted:

**In the specification:**

In paragraphs [0002] - [0004], and throughout the specification, updated information (Serial No. and updated status, if appropriate) should be provided for the related applications. [For example, in paragraphs [0002] - [0004], it appears “\_\_\_\_\_” should be changed to --09/858,309--, --09/858,323-- and --09/858,308--, respectively. See also paragraph [0030], at lines 4-6 (the serial/patent number should be provided, not merely the title); and paragraphs [0038], [0041], [0044], [and [0056], by way of example only.

In paragraph [0006], at line 7 of the paragraph, it appears “Transport” should be changed to --Transmission-- for consistency with the acronym as commonly used in the art.

In paragraph [0014], at line 10 of the paragraph, the proper antecedent for “the data” is not entirely clear here (the second processed data--? Note claim 10, e.g. The proper antecedents for “the data” and “the processed data” in paragraph [0015] (lines 6 and 6-7 of the paragraph).

In paragraph [0029], at line 14 of the paragraph, it appears “I/O” should be --input/output (I/O)--.

In paragraph [0030], at line 7 of the paragraph, “captioned” appears to read more clearly here as --referenced--. See also paragraphs [0038], [0041], [0044], [and [0056], by way of example only.

In paragraph [0031], at line 4 of the paragraph, it appears “102A” should be moved after “portion” (first occurrence) for clarity and consistency (see lines 1-2 of the paragraph, e.g.).

In paragraph [0034], at line 10 of the paragraph, the acronym “cPCI” does not appear to be accurate. That is, the use of “(c)PCI” for “(Compact) Personal Computer Interface” is confusing as this does not appear to be consistent with the terminology as is commonly used in the art.

[Should “Compact Personal Computer Interface” be changed to --Compact Peripheral

Component Interconnect--?] In line 11 of the paragraph, it appears “MHz” should be --megaHertz (MHz)--. In line 12 of the paragraph, and throughout the entire specification, all trademarks and trade names, and their respective owners, should be properly identified. See MPEP 608.01(v). See also paragraph [0037], at lines 5 and 17; paragraph [0048], at line 7; paragraph [0054], at line 10; and paragraph [00118], at line 1 of the paragraph, by way of example only.

In paragraph [0035], at line 7 of the paragraph, it appears --to-- should be inserted before “watch” for clarity.

In paragraph [0037], at line 6 of the paragraph, and throughout the specification, the first occurrence of all acronyms or abbreviations should be written out for clarity, whether or not they may be considered “well known.” Accordingly, “MB,” “RAM” and “GB” should be changed to --megabytes (MB)--, --random access memory (RAM)-- and --gigabyte (GB)--, respectively, for clarity. See also paragraph [0053], at line 9 , by way of example only.

In paragraph [0038], at line 6 of the paragraph, it appears --PCI-- should be inserted before “interface” for clarity (when read in conjunction with Figure 1) and consistency (note “box” 116 in Figure 1, e.g.).

In paragraph [0038], at line 27 of the paragraph, the acronym “PCI ” is somewhat confusing analogous to paragraph [0034]. That is, the use of “PCI” for “Personal Computer Interface” is confusing as this does not appear to be consistent with the terminology as is commonly used in the art. [Should “Personal Computer Interface” be changed to --Peripheral Component Interconnect--?]

In paragraph [0043], at lines 3 and 6 of the paragraph, it appears “102A upstream” should be --upstream portion 102A-- for clarity and consistency. Similarly, in lines 4 and 5-6, it appears “102B downstream” should be --downstream portion 102B-- for clarity and consistency. See also paragraph [0044], at lines 3 and 4, and paragraph [0046], at lines 1 and 2 of the paragraph, by way of example only.

In paragraph [0044], at line 9 of the paragraph, it appears “an” should be --and--.

In paragraph [0049], at line 3 of the paragraph, it appears “processors” should be --processor--.

In paragraph [0051], at line 2 of the paragraph, it appears “sync” should be --synchronous--. In line 6 of the paragraph, it appears “216A, 216B” should be --218A, 218B-- (note Figure 2).

In paragraph [0053], at line 3 of the paragraph, it appears “228A, 228B” should be simply --228-- for clarity and consistency. In line 4 of the paragraph, it appears “blocks” should be --block-- (note line 3 of the paragraph, e.g.). In line 7 of the paragraph, it appears “204” should be --122C--.

In paragraph [0054], at line 6 of the paragraph, it appears --connector-- and --logic-- should be inserted before “246” and “236,” respectively, for clarity and consistency (see Fig. 2, e.g.). In line 7 of the paragraph, it appears “same” should be --the same--. In line 8 of the paragraph, it appears “interface” should be --control logic-- for consistency.

In paragraph [0055], at line 3 of the paragraph, it appears “CAM” should be --CAMs--. In line 9 of the paragraph, it appears “via a” should be --via an--.

In paragraph [0056], at line 2 of the paragraph, "set 122C of cop-processors" is confusing (note line 6, referring to "daughter card 122C," e.g.). [Should "122C" in line 2 simply be deleted?]

In paragraph [0057], at line 7 of the paragraph, it appears --asynchronous-- should be inserted before "dynamic" (other than synchronous dynamic RAM discussed in lines 4-5).

In paragraph [0058], at line 6 of the paragraph, it appears --that-- should be inserted after "appreciated." In line 11, it appears "308" should be --302--.

In paragraph [0061], at line 3 of the paragraph, it appears --shared-- should be inserted before "memory" for clarity.

In paragraph [0066], at line 2 of the paragraph, it appears "banks" should be --bank--.

In paragraph [0067], at line 8 of the paragraph, it appears "Refer" should be --Referring--.

In paragraph [0070], at lines 3, 4 and 5 of the paragraph, it appears "Select" should be --Strobe-- for consistency with the acronyms (CAS and RAS)-- as commonly used in the art.

In paragraph [0071], at line 5 of the paragraph, it appears "refers" should be --refer--.

In paragraph [0072], at lines 1, 2 and 23 of the paragraph, it appears "118" should be --124-- for clarity and consistency (note line 2 of the paragraph, e.g.). See also paragraph [0082], at lines 6 and 8; paragraph [0097], at line 9; paragraph [00101], at line 3; paragraph [00107], at line 4; paragraph [00114], at lines 5 and 8; paragraph [00117], at line 1 of the paragraph; paragraph [00119], at line 1; and paragraph [00122], at lines 4 and 7, by way of example only. In line 2 of the paragraph, it appears "both" should be deleted. In lines 13, 15 and 17 of the paragraph, it appears a semi-colon is missing. In lines 14 and 16 of the paragraph, it appears "two" should be deleted.

In paragraph [0079], at lines 4, 8 and 10 of the paragraph, and throughout the remainder of the specification, "FIFO 312" is somewhat confusing (see paragraph [0072], at lines 10 and 12 of the paragraph, e.g.). It appears a sentence or phrase should be added explaining the use of different names for the same reference numeral. [For example, in paragraph [0071], at line 5 of the paragraph, after "312," insert language such as --Reference will be made hereinafter to both cache 312 and FIFO (or FIFO's) 312.--.]

In paragraph [0085], at line 10 of the paragraph, it appears "one (or very rarely two) clock edges" should be changed to --one clock edge (or very rarely two clock edges)-- for clarity.

In paragraph [0087], at line 9 of the paragraph, it appears "306D" should be --306B--.

In paragraph [0092], at line 4 of the paragraph, it appears "track the" should be --track of the-- for clarity.

In paragraph [0093], at line 8 of the paragraph, it appears "307B" should be --306B--.

In paragraph [0096], at line 3 of the paragraph, it appears "has been received" should be deleted (note the use of "it receives" in line 2).

In paragraph [0098], at line 3 of the paragraph, it appears "write" should be --the write--.

In line 4 of the paragraph, it appears "if" should be --is--.

In paragraph [0099], at line 2 of the paragraph, it appears "Idle" should be --an Idle state--.

In paragraph [00113], at line 4 of the paragraph, it appears "are" should be --is--.

In paragraph [00115], at line 8 of the paragraph, it appears "it's" should be --its--.

In paragraph [00117], at line 1 of the paragraph, it appears "a" should be --an--.

In paragraph [00120], at line 2 of the paragraph, it appears "NS" should be --nanoseconds (nS)-- for clarity.

The specification is also objected to because the descriptions of Figures 4 and 6-11 are incomplete (the detailed description appears to be barely more than the brief description of the drawings). A detailed description of the various states in the state machines or steps in the flow diagram should be provided for clarity and completeness.

Again note that these are merely exemplary. The entire specification should be carefully and completely reviewed to ensure that all possible errors are located and corrected.

**In the claims:**

In claim 2, line 3, it appears --of said first and second banks-- should be inserted after “other” for clarity and consistency (see line 6, e.g.). In line 5, it appears --of-- should be inserted after “one” for clarity.

In claim 4, line 1, it appears --on said (processed) data-- should be inserted after “action” for clarity and consistency (see claim 1, line 9, e.g., and also note the comments in numbered paragraph 5 below with respect to claim 1 and claim 10, lines 10-11).

In claim 6, line 1, it appears “are” should be --is-- (“each ... is”).

In claim 8, it appears “method further comprises using” in lines 1-2 and “which” in line 2 should be deleted for clarity and consistency (see claim 17, e.g.).

In claim 11, line 3, it appears --of said first and second banks-- should be inserted after “other” for clarity and consistency analogous to claim 2.

In claim 13, line 2, it appears --on said stored processed data-- should be inserted after “action” for clarity and consistency (note claim 10, lines 10-11, e.g.).

In claim 17, line 2, it appears “comprises” should be --comprises--.

In claim 18, line 1, it appears “said” reads more clearly here as --the--.

In claim 19, lines 4 and 5, it appears --means-- should be inserted after “memory” for clarity (to avoid possible antecedent problems, e.g.) and consistency (see line 2, e.g.). Similarly, it appears --means-- should be inserted after “memory” in lines 7 and 8 for clarity and consistency (note line 4).

Appropriate correction is required.

5. Claims 1-9, 11, 14-15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, and therefore its dependent claims, line 9, the proper antecedent for “said data” is not entirely clear here. See the “data” in lines 1 and 5, e.g., and note that the second processor retrieves the processed data. [Should --processed-- be inserted before “data” in line 9?] The proper antecedent for “said processed data” in line 10 is also not entirely clear. Again, it is not clear whether the second processor performs the second task on the “data” in lines 1 and 3, or the “processed” data in line 5, again noting that the second processor retrieves the processed data. [Should language such as --, thereby resulting in secondarily processed data-- be inserted after “data” in line 9, and --secondarily-- inserted before “processed” in line 10? Note claim 10, lines 10-12.]

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In claim 2, it is not clear what is meant by "substantially all (times)" since there does not appear to be a definition or other guidance in the specification explaining what is meant by "substantially all" (times) here.

In claim 5, as well as claim 14, the proper antecedent for "said data" is not entirely clear (in this regard, see the comments above with respect to claim 1).

In claim 6, as well as claims 11 and 15, it is not clear what is meant by "substantially all" analogous to claim 2.

In claim 19, line 9, the proper antecedent for "said data" (both occurrences) is not entirely clear analogous to claim 1.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1, 3-10 and 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryant et al.

With respect to claims 10 and 19, as well as method claim 1, Bryant et al discloses a bidirectional “data processor” or “apparatus” for processing a bidirectional dataflow including a first processor “means” [see processor 20 in one of the line cards 12 in Figure 1, and column 6, lines 33-44, e.g.] for receiving data from a bidirectional “interface” [see bus 14 and the buses input to/output from the line cards, as well as the interfaces 18 and 22 within the line cards, which may all may be considered part of the “interface”] and performing a first task on the data [see column 6, lines 36-44, e.g.], and a shared memory “means” [see shared buffer memory 16] coupled with the first processor, the first processor being operative to store the processed data in the shared memory “means” [see column 6, lines 57-63 and column 3, lines 46-57, e.g.]. Bryant et al further discloses a second processor “means” [a processor 20 in another line card 12] coupled with the shared memory and operative to retrieve the stored processed data from the shared memory and perform a second task on the data [see column 6, lines 60-68 and column 3, lines 60-65, e.g.]. The data or packet information may be transmitted to another line card or transmission service within the network via the bidirectional interface (note column 3, lines 16-23 and 60-65, e.g.).

With respect to claim 3, as well as claim 12, Bryant et al teaches that the first task may comprise at least one of inspection and analysis (see column 6, lines 36-44, e.g.).

With respect to claims 4 and 5, as well as claims 13 and 14, Bryant et al teaches that the second task may comprise taking an action such as “processing” packet data or information and transmitting the data (again see column 3, lines 60-65, e.g.).

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With respect to claims 6 and 15, insofar as definite and clear, the first and second processors in Bryant et al are characterized by some bidirectional bandwidth, and “substantially all” of the bidirectional bandwidth may be utilized for unidirectional data flow when data is transferred to or from one of the line cards or the shared memory.

With respect to claims 7 and 16, the second processor in Bryant et al is unaware of the “how” the processed data was stored in the shared memory by some other device or line card.

With respect to claim 8, as well as claim 17, Bryant et al discloses that the first and second processors may comprise network processors (see column 2, lines 52-63 and column 6, lines 19-44, e.g.).

With respect to claims 9 and 18, Bryant et al teaches that the transmitting may be “based on” a result of the second task, which may include processing and transmitting the packet information (again see column 3, lines 60-65).

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hughes is cited as disclosing a communications system including shared synchronous dynamic random access memory (SDRAM) having a plurality of banks similar to the present invention (see column 6, lines 6-38 and column 10, line 24, e.g.).

Mathur is cited as disclosing a system and method for processing packets in a network including a plurality of controllers coupled to a shared memory similar to the present invention.

Tanaka et al is cited as disclosing an integrated circuit including a plurality of processors and a shared memory coupled to a network.

Elliott et al is cited as disclosing a system including a plurality of processors or CPUs coupled to a shared memory via a bidirectional bus similar to the present invention (see Figure 1, e.g.).

Johnson et al is cited as disclosing a system including a plurality of processors coupled to a shared memory for transferring packet data over a network similar to the present invention (note Figure 2, e.g.).

Bakke et al is cited as disclosing a method and apparatus for processing and forwarding packets in a network similar to the present invention.

The Jungck et al (U.S. '079), Jungck et al (U.S. '938) and Najam et al patent application publications are cited as corresponding to the related applications discussed in the specification and also mentioned in the Information Disclosure Statement (IDS) filed August 29, 2001 (in this regard, also see numbered paragraph 4 above with respect to paragraphs [0002] - [0004])

It is also noted here that the references which have been "lined through" on form PTO-1449 submitted with the Information Disclosure Statement (IDS) filed August 29, 2001 have NOT been considered since the dates of the references have not been provided and it is not clear whether the references constitute prior art (the Office does not provide advisory opinions for undated references).

Copending application Serial No. 09/602,286 cited in the IDS has also NOT been considered since a complete copy of the application was not provided as required (the drawings were not provided, and the specification is somewhat confusing to read without the drawings since it

repeatedly refers to the drawings), and since that application is currently undergoing allowance/issue processing and is not readily available to the Examiner.

8. Claims 2 and 11, insofar as definite and clear, would appear to be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Gossage whose telephone number is (703) 305-3820.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (703) 308-1756.

The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238 (After Final Communications)  
(703) 746-7239 (Official Communications)

(703) 746-5713 (Use this FAX number only after approval by the Examiner, for INFORMAL or DRAFT communications.)



GLENN GOSSAGE  
PRIMARY EXAMINER  
ART UNIT 2187